AMSAT News Service Weekly Bulletins
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SB SAT @ AMSAT  $ANS-264.01
ESA  INFO ON ARIANE 502

HR AMSAT NEWS SERVICE BULLETIN 264.01 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 21,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-264.01

ESA RELEASES INFORMATION ON ARIANE 502 FLIGHT SCHEDULE

No. 28-97, Paris, 17 September 1997
JOINT ESA/CNES PRESS RELEASE
ARIANE 502 - Launch preparations

ANS provides the following just as it was received from ESA:

Preparations for the second Ariane-5 qualification flight (A502) are going ahead simultaneously at the Ariane 5 launch complex (ELA-3) at the Guiana Space Centre, Europe's spaceport in Kourou in French Guiana, and at the main industrial sites in Europe.

The launcher preparation campaign began on 16 June in Guiana (see ESA/CNES press release of the same date) and is proceeding satisfactorily. The data output from the Launcher Countdown Rehearsal, which took place on 5 September, has now been analyzed and the results are correct and in accordance with predictions.

However, in line with the overriding concern for rigour and achievement of maximum reliability on this second flight, additional studies and tests at launcher system level and below have proven necessary. While these have now almost all been completed with satisfactory results, some  checks relating to analysis of the launcher's dynamic behavior have yet to be completed.

It will not therefore be possible to announce a new target date for the launch - previously scheduled to take place on or soon after 30 September 1997 - until 25 September at the earliest, when the final steps in the launch campaign have been finalized.

Keep tuned to ANS for further updates.
Official information on P3D can be found in ANS bulletin ANS-250.01

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SB SAT @ AMSAT  $ANS-264.02
BoD ELECTION RESULTS

HR AMSAT NEWS SERVICE BULLETIN 264.02 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 21,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-264.02

AMSAT-NA Corporate Secretary Martha Saragovitz has announced
the results of the annual election for the AMSAT Board of
Directors. A total of 1386 members cast ballots in this year's
election and the results are as follows:

Bill Tynan, W3XO.....1234*
Stan Wood, WA4NFY.....1161*
Dick Daniels, W4PUJ.....1114*
Joe Holman, AD7D..... 933*
Barry Baines, WD4ASW..... 842#

The four candidates receiving the highest number of votes
(*) were elected to serve on the Board for two years. The fifth
highest vote getter (#) will serve as the alternate until the
next election. The newly elected board will meet at the site of
the AMSAT-NA Annual Meeting in October. At that time they will
elect AMSAT-NA Officers.

[ANS thanks Bill Hook, W3QBC, and Martha Saragovitz
for this report.]

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SB SAT @ AMSAT $ANS-264.03
SPUTNIK EVENT

HR AMSAT NEWS SERVICE BULLETIN 264.03 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 21,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-264.03

To celebrate the 40th Anniversary of the launch of Sputnik 1 on
Saturday October 4th, MX1ASE and GX0AUK will be on voice
mode for 24 hours on all available satellites. Operations continue
as time permits until 2359 UTC November 3rd the 40th anniversary of
the launch of Sputnik 2.

Joining the event Leo Labutin, UA3CR, and Andy Miranov, PK3KPK, from
the Russian Satellite Ground Station near Moscow. Andy will be on CW
on the RS birds and Leo on Voice and CW on FO-20 and FO-29.
The organizers thank JARL for their help in switching FO-29 to mode
JA on Saturday 4th for the event.

Calling "CQ SPUTNIK" the preferred downlinks for MX1ASE and GX0AUK are
AO-10 145.910, RS-12 145.910/29.430, RS-15 29.370, FO-20/29 435.860,
and AO-27 436.800

A contact with any of the participating calls and a station can apply for a
limited edition Anniversary Award Certificate. A4 size printed in color and
endorsed with your name or call sign. Certificates cost £4 or $10 U.S.
including postage. The moneys raised will be used to purchase much needed
antennas and rotators for the Russian Ground Station which commands the RS
satellites. SWL's are invited to apply and also anyone who wishes to make
a donation. Donations of £4 ($10) qualify for a certificate.

Address for applications: John, G7HIA, Chestnuts, Desford Lane
Kirkby Mallory, Leicestershire LE9 7QF ENGLAND.

The organizers would like to thank Mike Ellis of Eagle Antennas
and Yaesu / Martin Lynchire & Son for special prices on the equipment
requested by the ground station.

[ANS thanks John Heath for this update.]

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SB SAT @ AMSAT  $ANS-264.04
EME RECORD

HR AMSAT NEWS SERVICE BULLETIN 257.04 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 21,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-264.04

On Sunday September 21st (UTC) on 144.028 MHz, Dave Blaschke, W5UN, and Graham Daubney, F/G8MBI, achieved the first single-yagi to single-yagi EME QSO in history.

W5UN was using an old KLM 17LBX (one of the few which survived from the destruction by tornado of his first array) and F/G8MBI was using one of Mike Stahl's 2M-8WLs.  Both stations were running maximum legal power and neither employed ground gain. Success was achieved on the third schedule attempt.

[ANS thanks Ray Soifer, W2RS, for this news.]

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SB SAT @ AMSAT  $ANS-264.05
WEEKLY SATELLITE REPORT PT 1

HR AMSAT NEWS SERVICE BULLETIN 257.05 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 21,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-264.05

MIR
(Simplex 437.650 MHz. FM voice and packet.)
MIREX will be running  the test from September 6, until September 28 1997 world wide. After the completion of the test, they will switch the MIR PMS frequency back to the current 2-meter frequency on September 29th. See ANS Bulletin ANS-250.02 for more information. Test frequency is 437.650  MHz.

MIR 70 cm experiment programming for an FT-736r
Start of pass at 60 end at 70

| channel | RX | repeater offset | freq offset | resulting TX |
|---|---|---|---|---|
| 60. | 437.660 | minus | 00.020 | 437.640 MHz |
| 61. | 437.658 | minus | 00.016 | 437.642 |
| 62. | 437.656 | minus | 00.012 | 437.644 |
| 63. | 437.654 | minus | 00.008 | 437.646 |
| 64. | 437.652 | minus | 00.004 | 437.648 |
| 65. | 437.650 | simplex | 00.000 | 437.650 |
| 66. | 437.648 | plus | 00.004 | 437.652 |
| 67. | 437.646 | plus | 00.008 | 437.654 |
| 68. | 437.644 | plus | 00.012 | 437.656 |
| 69. | 437.642 | plus | 00.016 | 437.658 |
| 70. | 437.640 | plus | 00.020 | 437.660 |

[ANS thanks Richard L. Elverum, KB0VBZ , for this information.]

SAFEX, MIR 70 cm Repeater
(Uplink 435.750 MHz FM, Downlink 437.950 MHz FM,
Subaudible tone 141.3 Hz)
Not operational at this time.

RS-10
(Uplink 145.865-145.905 MHz CW/SSB, Downlink 29.36-29.4 MHz CW/SSB)
RS-10 Still silent.

RS-12
(Uplink 21.21-21.25 MHz CW/SSB, Downlink 29.41-29.45 MHz or
145.91-145.95 MHz CW/SSB)
Operational.
RS-12 continues to provide good signals to North America, in spite
of the increased daytime activity on 15 m. Ops are encouraged to
listen to 15 m before they transmit, however. There may be a simplex
QSO in progress on the frequency you have chosen."
[ANS thanks Dick Montgomery, N3DV, for this update.]

RS-15
(Uplink 145.858-145.898 MHz CW/SSB, Downlink 29.354-29.394 MHz CW/SSB)
Operational.
(Hint: If SSB doesn't work for you, try CW. CW is very easy
to hear on the downlink!)

RS-16
IW9ELR, heard the 435.504 MHz beacon-telemetry of
RS16.
Transponder information on RS-16.
Uplink = 145.915 - 145.948 MHz
Downlink = 29.415 - 29.448 MHz
Beacons = 29.408 , 29.451 MHz
Pwr 29 MHz Down = 1.2 W /4 W

Beacon 1 = 435.504 MHz
Beacon 2 = 435.548 MHz
Pwr 435 MHz Beacons = 1.6 W

FO-20
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9
MHz CW/USB)
Operational. FO-20 in mode JA continuously.
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]

KO-23
(Uplink 145.85, 145.9 MHz FM, Downlink 435.175 MHz FM,
9600 Baud FSK.)
KO-23 operating normally.

KO-25
(Uplink 145.980 MHz FM, Downlink 436.5 MHz FM,
9600 Baud FSK.)
KO-25 operating normally.
Both Kitsats are yielding download efficiencies greater than 90%.
[ANS thanks Jim Weisenberger, AA7KC, for his reports on
KO-25 and KO-23.]

AO-27
(Uplink 145.85 MHz FM, Downlink:
436.792 MHz FM (As of April 1, 1997)
Operating normally.
This information can be found at www.umbra.com
AO-27 TEPR (Timed Eclipse Power Regulation) States are as follows
As of July 6, 1997

| TEPR STATE | Time | TX Status |
|---|---|---|
| 1 | n/a | OFF |
| 2 | n/a | OFF |

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       3           ---         OFF
As of 9/21/97 the TEPR State are set to:
Tepr 4 - 12.5 Minutes
Tepr 5 - 18.0 Minutes
       6           ---         OFF
Current Information about AO-27 can be found at www.umbra.com

The TEPR States are defined as follows:

Tepr 1, Started when the satellite Enters the Eclipse
Tepr 2, Started at (tepr 1 time) after the satellite enters the eclipse
Tepr 3, Started at (tepr 1 time) + (tepr 2 time).

Tepr 4, Started when the satellite enters the Sun
Tepr 5, Started at (tepr 4 time) after the satellite enters the Sun
Tepr 6, Started at (tepr 4) + (tepr 5).

It should noted that TEPR states 1,2 and 3 happen during the Night Time
passes and TEPR states 4,5 and 6 happen during the Day time passes.
These occur during EVERY pass, not just over the U.S.A.

The times assigned to the TEPR states are chosen for the health of the
satellite over operation convenience. Therefore, during parts of the
year the satellite will turn on late or turn off early as seen by ground
stations.

Users are asked not to transmit on 145.85 MHz if they do not hear the
satellite's downlink so as to avoid possible interference to other
satellite uplinks and downlinks on adjacent frequencies.
[ANS thanks Michael Wyrick, N4USI, AO-27 Control-op, for this update.]

FO-29
Voice/CW Mode JA
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB)
Digital Mode JD
(Uplink 145.85, 145.87, 145.910 MHz FM, Downlink 435.910 MHz FM 9600
baud BPSK)
Operational.
The latest FO-29 Schedule.
Sept 19 (Fri)    00:51z  JD9600
Sept 26 (Fri)    08:09z  JA
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]

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SB SAT @ AMSAT  $ANS-264.06
WEEKLY SATELLITE REPORT PT 2

HR AMSAT NEWS SERVICE BULLETIN 264.06 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 21,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-264.06

AO-10
(Uplink 435.030-435.18 MHz CW/LSB, Downlink 145.975-145.825 MHz
CW/USB)
Operational.
AO-10 IS spinning very slowly. Drag doesn't slow down its rotation, but
magnetic damping around perigee does. It may well be wobbling a bit, since
its nutation dampers probably don't work very well at this slow spin rate
(about 1.5 RPM or so). However, Stacey Mills, W4SM, wouldn't describe its
motion as TUMBLING. If it were tumbling, solar illumination would be truly
chaotic and the transponder activity would come and go in a nearly random
fashion. There would be no twice yearly periods of good/bad AO-10
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transponder/beacon function as there now are. So the majority of AO-10's motion must continue to be around the Z-axis which remains relatively stable in its orientation (see Web page below for some caveats regarding possible movement of AO-10's Z-axis orientation in the last year).

The QSB is mainly experienced during periods of high (90 deg) squint, when the omni antenna is routinely masked and unmasked by the three lobes of the space frame. During these times, for reasons that aren't entirely clear, switching polarization improves the downlink signal.
See: http://www.cstone.net/~w4sm/AO-10.html
for more info.
[ANS thanks Stacey Mills, W4SM, for this report.]

OSCAR-11
(Downlink 145.825 MHz. FM, 1200 Baud PSK. Beacon 2401.500 MHz..)
Operating normally. OSCAR-11 REPORT 14 September 1997
During the period 19 August to 13 September excellent signals have once again been received from the 145.826 MHz beacon. Telemetry nominal. The battery voltage has been maintained in the range 13.9 to 14.4 volts. The internal temperatures are slowly increasing from the minimum values observed at the end of June (battery -0.4C, telemetry electronics -1.6 C). The battery temperature is now 8.4C, and telemetry electronics 6.8C. The increased temperature is due to a reduction in solar eclipse times, which is expected to continue into October.

The WOD survey of channels 10, 20, 30, 40 (+Y, -X, +X array currents, array voltage) dated 25 June was transmitted until the end of August. The timing of this WOD coincided with the maximum eclipse times. This WOD is now available from my web site (details below). At the end of August a further survey of the same channels was taken, dated 26 August. This was quickly followed by channels 21, 31, 41, 51 (equipment currents) dated 30 August, and then by channels 10, 20,30, 40, dated 03 September, which are now being transmitted.

A single AMSAT-UK bulletin dated 21 June, by Richard G3RWL has been transmitted. This featured Sputnik-1 40th anniversary, MIR frequencies, and RS-10 news, and the Keplerian elements for OSCAR-11.

Considerable interest is now being shown in the mode-S beacon, as operators prepare for Phase-3D. Reports indicate that it is a very weak signal, and therefore ideal for testing converters, once they have been set up using the much stronger signal from DOVE. Reports have indicated that the signal from OSCAR-11 is around 24 dB below that of DOVE. There are however considerable variations in the comparisons which vary between -15 dB and -36 dB! Before the beacon partially failed the signal was measured at -3 dB below DOVE.

Hans, HB9AQZ, reports hearing the beacon using a 26 turn helix, mounted in the shack, and pointing through a double glass window. Ib OZ1MY in Copenhagen heard the beacon with two 16 turn helixes, feeding an SSB down converter and pre-amp (combined noise figure 1.5 dB). Trevor, VK4AFL, reports S3 signals with a 60 cm dish, two turn helix feed, D.E.M converter and pre-amp. Victor, OE1VKW, reports S3-4 signals using a 67 element antenna, horizontal polarization, and UEK-2000 SAT. On the same equipment DOVE was received at S7-8. Thanks for all the reports.

The operating schedule is unchanged.

ASCII status (210 seconds)
ASCII bulletin (60 seconds)
BINARY SEU (30 seconds)
ASCII TLM (90 seconds)

```
        ASCII WOD (120 seconds)
        ASCII bulletin (60 seconds)
        BINARY ENG (30 seconds)

There  are  also  additional  status  blocks  after  each bulletin is
transmitted, and between ASCII TLM and WOD.

The mode-S beacon is ON, transmitting an unmodulated  carrier,  but
telemetry indicates that it has partially failed, and delivering half
power. Any reports of reception on 2401 MHz.  would be most welcome.
Please e-mail g3cwv@amsat.org.

The 435.025 MHz. beacon is normally OFF. However it can sometimes be
heard when the satellite is being commanded by ground control, ie.
within range of Guildford, UK.  When the 435 beacon is  transmitting,
the 145 beacon is normally OFF. The data transmitted is mainly
binary.

OSCAR-11 users are welcome to visit Clive's web site.  It contains some
software for capturing data, and decoding ASCII telemetry and WOD.
There is an archive of raw data (mainly WOD) for analysis, which is
continually being expanded, as new data is captured. The URL is -

      http://www.users.zetnet.co.uk/clivew/

[ANS thanks  Clive Wallis, G3CWV, for this information.]

AMSAT-OSCAR-16 (PACSAT)
(Uplink 145.9, 145.92, 145.94, 145.86 MHz FM, 1200 bps Manchester FSK
Downlink 437.0513 MHz SSB, 1200 bps RC-BPSK 1200 Baud PSK.
Beacon 2401.1428 MHz.)
Operating normally.
Below is a data  sample of the +Z Array temperatures
when its position is toward the sun.

uptime is 1098/06:45:16.  Time is Sat Sep 20 12:11:56 1997
IR Detector    255.000 C  +Z Array V      22.608 V
-Z Array Cur    -0.022 A  +Z Array Cur     0.240 A

+Z Array Temp   -0.607 D  (Time is 12:06:56 1997)
+Z Array Temp   19.967 D  (Time is 12:14:56 1997)
(** a thermal gradient of +20.574 D in 8 min.)

Total Array C= 0.240 Bat Ch Cur= 0.040 Ifb= 0.042 I+10V= 0.217
TX:010B BCR:85 PWRC:59E BT:3C WC:25 EDAC:4B

Graphic information about WOD/Telemetry values can be found at:
http://www.arrakis.es/~ea1bcu/wod.htm

[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

DO-17(DOVE)
( Downlink 145.825 MHz FM, 1200 Baud AFSK.
Beacon 2401.220 MHz.)
DOVE has returned to 2 meters.
Operational software has again been successfully loaded into DOVE (DO-17)
by the DOVE command team.  WD0E started the software at 09/17/97 19:40 UTC
and reports it seems to be running OK.  Reports on the condition of the
batteries for the next 24 hours would be appreciated.  Please send them to
wd0e@amsat.org.  Jim reports it remains to be seen how long the intermittent
watchdog timer in the satellite will allow this software to run.
The s-band transmitter is on to facilitate testing of s-band equipment on
the ground, particularly for those working toward P3D S capability.  Power
level on the 2 meter transmitter is about 1W day and night. Telemetry is
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currently being sent every 60 seconds, but this could change due to power
management needs.
[ANS thanks Jim White, WD0E, for this update.]

WEBERSAT (WO-18)
(Downlink 437.104 MHz SSB, 1200 Baud PSK AX.25.)
No report available.

 LUSAT-OSCAR-19
(Uplink 1200 bps Manchester FSK Uplinks:
145.84, 145.86, 145.88, 145.9 MHz FM, Downlink 437.125  MHz SSB,
1200 bps RC-BPSK.)
Operating normally.
.Below is a data  sample of the birds temperatures.
Uptime is 822/22:07:24.  Time is Sat Sep 20 12:12:34 1997
Bat 1 Temp       0.131 D  Bat 2 Temp       0.131 D
Baseplt Temp     0.692 D  RC PSK BP Temp   0.692 D
RC PSK HPA Tmp   2.374 D
RC PSK TX Out    0.950 W

Total Array C= 0.140 Bat Ch Cur=-0.063 Ifb= 0.041 I+10V= 0.211
TX:01A BCR:80 PWRC:36E BT:3C WC: 0
<To add 6,83 minutes to the clock of the satellite>Graphic and general
information about Telemetry values can be found at:
http://www.arrakis.es/~ea1bcu/lo19.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

UO-22:
(Uplink: 145.9 or 145.975 MHz FM. Downlink 435.120 MHz FM
9600 Baud FSK.)
UO-22 is operating normally.
Chris Jackson, G7UPN / ZL2TPO, has reloaded the Store and Forward
communications task on the UO-22 On-Board Computer. This task includes
incremental checksums which should make uploading slightly faster.
In the old task, once an upload was complete, the spacecraft had to
perform the checksum on the complete file. Depending on the file
length, this could take quite a long time. With the new task, the
checksum is computed on the fly - while the data is actually being
uploaded. Thus there is no need to recompute it at the end of the
transfer and this checksum delay is then removed.

However, all files that were started before Chris Jackson, G7UPN /
ZL2TPO, loaded the task around 1000 UTC on the 19th will receive a corrupt
body checksum error when the upload is completed. If the file is uploaded
again, it should be accepted. If trying to upload a large file that was
started before the above time, then start again.

If anyone gets persistent body checksum errors while uploading files to
UO-22 would they please let Chris Jackson know as soon as possible

[ANS thanks Chris Jackson, G7UPN / ZL2TPO,
Groundstation and Operations Manager, for this report.]

IO-26 ( ITAMSAT)
Uplink 145.875, 145.9, 145.925, 145.95 MHz FM, Downlink 435.822 MHz SSB,
1200 Baud PSK.)
It's message says IHT97 software loaded. WOD not enabled.
.Its signal is very weak
[ANS thanks Charles Parmelee for this report.]

[Please send your Satellite or News reports to ANS Editor B.J. Arts,
WT0N, via e-mail, at bjarts@the-bridge.net or to wt0n@amsat.org]

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